

IN THE CLAIMS:

On page 34, line 1, delete "Claims" and insert:

--WHAT IS CLAIMED IS:--.

Cancel claims 1-30, without prejudice.

Add the following new claims 31-60:

--31. (New) A device for etching a silicon body substrate (10) using an inductively coupled plasma (14), comprising: an ICP source (13) for generating a radio-frequency electromagnetic alternating field; a reactor (15) for generating the inductively coupled plasma (14) from reactive particles by the action of the radio-frequency electromagnetic alternating field on a reactive gas, and a first means for generating plasma power pulses to be injected into the inductively coupled plasma (14) by the ICP source (13).

32. (New) The device according to Claim 31, wherein the first means is an ICP coil generator (17) which generates a variably adjustable, pulsed radio-frequency power with regard to the pulse to pause ratio of the plasma power pulses or the individual pulse power.

33. (New) The device according to Claim 32, further comprising an impedance transformer (18) in the form of a balanced symmetrical matching network for matching an initial impedance of the ICP coil generator (17) to a plasma impedance which is dependent on the individual pulse power of the plasma power pulses to be injected.

34. (New) The device according to Claim 33, wherein the impedance transformer (18) is preset in such a way that with a specified maximum individual pulse power of the plasma power pulses to be injected into the inductively coupled plasma (14) in the case of stationary power, a substantially optimum impedance matching is ensured.

35. (New) The device according to Claim 32, wherein components are integrated into the ICP coil generator (17) which, via a variation of the frequency of the generated electromagnetic alternating field, perform impedance matching as a function of the individual pulse power to be injected.

36. (New) The device according to Claim 35, wherein the ICP coil generator (17) includes an automatically acting feedback circuit having a frequency-selective component (1), the feedback circuit having at least one controlled power amplifier, a frequency-selective band filter with a stationary frequency (1'') to be attained and a delay line (7) or a phase shifter.

37. (New) The device according to Claim 31, further comprising a second means for generating a static or time-variable, particularly pulsed magnetic field between the substrate (10) and the ICP source (13).

38. (New) The device according to Claim 37, wherein the first means is a magnetic field coil (21) with an associated power supply unit (23) or a permanent magnet, the magnetic field generated by the magnetic field coil (21) via the power supply unit (23) being time-variable, capable of being pulsed in particular.

39. (New) The device according to Claim 31, further comprising a substrate voltage generator (12) which can apply a continuous or time-variable radio-frequency power, a pulsed radio-frequency power in particular, to a substrate (10) arranged on a substrate electrode (11).

40. (New) The device according to Claim 39, further comprising a first impedance transformer (12) for impedance matching between the substrate voltage generator (12) and the substrate (10).

41. (New) The device according to Claim 39, wherein an ICP coil generator (17) is connected to the substrate voltage generator (12) or a power supply unit (23).

5/31
42. (New) A method for etching a silicon body substrate (10) using the device according to Claim 31, comprising the step of injecting a pulsed radio-frequency power into the inductively coupled plasma (14) as a pulsed plasma power.

43. (New) The method according to Claim 42, wherein the pulsed plasma power is injected via an ICP source (13) to which a radio-frequency electromagnetic alternating field

having a constant frequency or a frequency which varies within a frequency range is applied around a stationary frequency (1'').

44. (New) The method according to Claim 42, wherein the pulsed radio-frequency power is generated with an ICP coil generator (17) which is pulse-operated with a frequency of 10 Hz to 1 MHz and pulse to pause ratio of 1:1 to 1:100.

5102 → 45. (New) The method according to Claim 42, wherein a plasma power of 300 watts to 5000 watts on the time average is injected into the inductively coupled plasma (14) and that the generated individual pulse powers of the radio-frequency power pulses are between 300 watts and 20 kilowatts, in particular 2 kilowatts to 10 kilowatts.

46. (New) The method according to Claim 42, wherein the pulsing of the injected radio-frequency power is accompanied by a change of the frequency of the injected radio-frequency power, the frequency change being controlled in such a way that the plasma power injected into the inductively coupled plasma (14) during the pulsing is maximized.

5103 → 47. (New) The method according to Claim 42, wherein during the etching, a static or time-variable, in particular periodically varying or pulsed magnetic field is generated, the direction of which is at least approximately or predominantly parallel to a direction defined by the connecting line of the substrate (10) and the inductively coupled plasma (14).

48. (New) The method according to Claim 47, wherein the magnetic field is generated in such a way that it extends into the area of the substrate (10) and the inductively coupled plasma (14) and has a field strength amplitude between 10 MTesla and 100 mTesla in the interior of the reactor (15).

49. (New) The method according to Claim 47, wherein a magnetic field pulsed at a frequency of 10 Hz to 20 kHz is generated via the power supply unit (23), the pulse to pause ratio when the magnetic field is pulsed being between 1:1 and 1:100.

50. (New) The method according to Claim 42, wherein a constant or time-variable, in particular pulsed, radio-frequency power is applied to the substrate (10) via a substrate voltage generator (12).

51. (New) The method according to Claim 50, wherein the pulse duration of the radio-frequency power injected into the substrate is between one to one hundred times, one to ten times in particular, the period of oscillation of the high-frequency fundamental component of the radio-frequency power.

52. (New) The method according to Claim 50, wherein the radio-frequency power applies a time-average power of 5 watts to 100 watts to the substrate (10), the maximum power of an individual radio-frequency power pulse being one to 20 times, in particular twice to 10 times, the time average power.

53. (New) The method according to Claim 51, wherein the frequency of the injected radio-frequency power is between 100 kHz to 100 MHz, 13.56 MHz in particular, and that the pulse to pause ratio of the injected radio-frequency pulses is between 1:1 and 1:100, 1:1 and 1:10 in particular.

54. (New) The method according to Claim 42, wherein the pulsing of the injected plasma power and the pulsing of the radio-frequency power injected into the substrate (10) via the substrate voltage generator (12) or the pulsing of the magnetic field, the pulsing of the injected plasma power and the pulsing of the radio-frequency power injected into the substrate (10) via the substrate voltage generator (12) are time-correlated or synchronized with each other.

55. (New) The method according to Claim 54, wherein the correlation takes place in such a way that the magnetic field is first applied, before a radio-frequency power pulse of the ICP coil generator (17), and the magnetic field is switched off again after the decay of this radio-frequency power pulse.

56. (New) The method according to Claim 54, wherein the correlation takes place in such a way that during a radio-frequency power pulse of the ICP coil generator (17), the

radio-frequency power injected into the substrate (10) via the substrate voltage generator (12) is switched off and/or that during a radio-frequency power pulse injected into the substrate (10) via the substrate voltage generator (12), the radio-frequency power injected via the ICP coil generator (17) is switched off.

57. (New) The method according to Claim 54, wherein the synchronization takes place in such a way that during each time of a plasma power pulse injected into the plasma (14) via the ICP coil generator (17), radio-frequency pulses injected into the substrate (10) via the substrate voltage generator (12) are also applied to the substrate (10).

58. (New) The method according to Claim 54, wherein the correlation takes place in such a way that the radio-frequency power injected into the substrate (10) via the substrate voltage generator (12) is generated in each case during a power rise and/or a power drop of a radio-frequency power pulse injected into the plasma (14) via the ICP coil generator (17).

59. (New) The method according to Claim 54, wherein the correlation takes place in such a way that during the time of the plasma power pulses injected into the plasma (14) via the ICP coil generator (17) and during the time of the pulse pauses between the individual plasma power pulses injected into the plasma (14) via the ICP coil generator (17), at least one radio-frequency power pulse injected into the substrate (10) via the substrate voltage generator (12) is applied to the substrate (10) in each case.

60. (New) The method according to Claim 42, wherein the etching takes place in alternating etching and passivation steps at a process pressure of 5 μ bar to 100 μ bar.--

Remarks

This Preliminary Amendment cancels, without prejudice, original claims 1-30 in the underlying PCT Application No. PCT/DE00/01835. These claims have been rewritten as new claims 31-60 so as to conform the claims to U.S. Patent and Trademark Office rules, and they do not add new matter to the application.

The above amendments to the specification and abstract conform the specification and abstract to U.S. Patent and Trademark Office rules and incorporate any